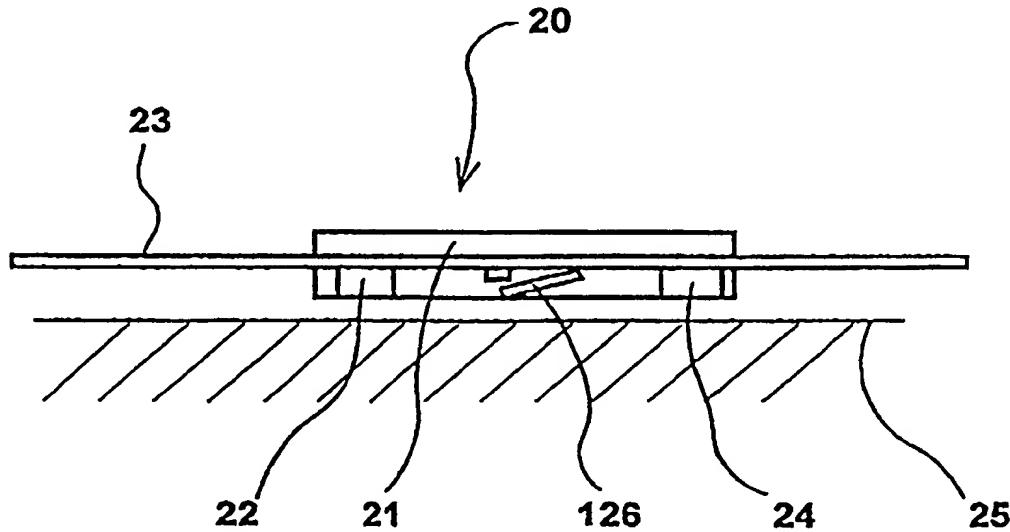


## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

|   |  |   |  |
|---|--|---|--|
| (51) International Patent Classification <sup>6</sup> :<br><b>A61B 5/00</b>   |  | A1  | (11) International Publication Number: <b>WO 00/28888</b>          |
|   |  |   | (43) International Publication Date: <b>25 May 2000 (25.05.00)</b> |
| <b>(21) International Application Number:</b> PCT/IL99/00613<br><b>(22) International Filing Date:</b> 15 November 1999 (15.11.99)<br><br><b>(30) Priority Data:</b><br>60/108,505 16 November 1998 (16.11.98) US<br>60/113,986 28 December 1998 (28.12.98) US  |  | <b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). |  |
| <b>(71) Applicant (for all designated States except US):</b> S.P.O. MEDICAL EQUIPMENT LTD. [IL/IL]; P.O. Box 573, 79779 Neve Dekalim (IL).<br><br><b>(72) Inventor; and</b><br><b>(75) Inventor/Applicant (for US only):</b> SARUSSI, Israel [IL/IL]; Moshav Ganei Tal, 79792 Mobile Mail Hof Aza (IL).<br><br><b>(74) Agent:</b> EITAN, PEARL, LATZER & COHEN-ZEDEK; Gav Yam Center 2, Shenkar Street 7, 46725 Herzlia (IL). |  | <b>Published</b><br><i>With international search report.</i>  |  |

(54) Title: A SENSOR FOR RADIANCE BASED DIAGNOSTICS



## (57) Abstract

The present invention provides a sensor (20) for radiance based diagnostics of body tissue including a performing component (21) and an adhering component (23). The performing component includes at least one radiance source (22) for radiating a tissue, and at least one detector (24) for detecting rays emitted from the radiance source. The adhering component is capable of fastening the performing component to a tissue such that the radiance source, and detector are facing and contiguous with the tissue. When operative, the adhering component fastens the performing component to the tissue to the extent that the detector receives only rays which are transmitted through or reflected from the tissue. The sensor may include a controlling device which senses external conditions and which is capable of controlling the sensor in response to the sensed conditions. The sensor may also be in communication with an electronic circuit, which may control the radiance source, and/or detector, performing analysis of data received by the detector.

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IL99/00613

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61B 5/00  
US CL :600/310

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 600/310, 322, 323, 340, 344

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No.        |
|-----------|--|------------------------------|
| X         | US 4,830,014 A (GOODMAN et al.) 16 May 1989, col. 4 line 59 to col. 5 line 2.      | 1-6, 10, 13-18, 20-23, 26-32 |
| X         | US 5,054,488 A (MUZ) 08 October 1991, col. 3 line 59 to col. 4 line 7.             | 1, 4, 13, 14, 22, 23, 27-32  |
| X         | US 5,427,093 A (OGAWA et al.) 27 June 1995, entire document.                       | 1-4, 7, 10, 12-16, 19, 27-32 |

 Further documents are listed in the continuation of Box C. See patent family annex.

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Date of the actual completion of the international search

16 FEBRUARY 2000

Date of mailing of the international search report

07 MAR 2000

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

ERIC F. WINAKUR

Telephone No. (703) 308-3940

## PENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

|  |   |
|--|---|
| Date of mailing (day/month/year)<br>17 January 2000 (17.01.00) |   |
| Applicant's or agent's file reference<br>P-2040-PC             | IMPORTANT NOTIFICATION  |
| International application No.<br>PCT/IL99/00613                | International filing date (day/month/year)<br>15 November 1999 (15.11.99) |

From the INTERNATIONAL BUREAU

To:

EITAN, PEARL, LATZER & COHEN-ZEDEK  
Gav Yam Center 2  
Shenkar Street 7  
46725 Herzlia  
ISRAËL

|   |                      |  |                    |  |
|---|----------------------|--|--------------------|--|
| 1. The following indications appeared on record concerning:   |                      |  |                    |  |
| <input checked="" type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative                                       |                      |  |                    |  |
| Name and Address<br><br>S.P.O. MEDICAL EQUIPMENT LTD.<br>P.O. Box 192<br>Neve Dekalim 79779<br>Mobile Mail Hof Aza<br>Israel  | State of Nationality |  | State of Residence |  |
|   | IL                   |  | IL                 |  |
|   | Telephone No.        |  |                    |  |
|   | Facsimile No.        |  |                    |  |
| Teleprinter No.   |                      |  |                    |  |
| 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:   |                      |  |                    |  |
| <input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence               |                      |  |                    |  |
| Name and Address<br><br>S.P.O. MEDICAL EQUIPMENT LTD.<br>P.O. Box 573<br>Neve Dekalim 79779<br>Mobile Mail Hof Aza<br>Israel  | State of Nationality |  | State of Residence |  |
|   | IL                   |  | IL                 |  |
|   | Telephone No.        |  |                    |  |
|   | Facsimile No.        |  |                    |  |
| Teleprinter No.   |                      |  |                    |  |
| 3. Further observations, if necessary:  |                      |  |                    |  |
| 4. A copy of this notification has been sent to:  |                      |  |                    |  |
| <input checked="" type="checkbox"/> the receiving Office<br><input checked="" type="checkbox"/> the International Searching Authority<br><input type="checkbox"/> the International Preliminary Examining Authority |                      | <input type="checkbox"/> the designated Offices concerned<br><input type="checkbox"/> the elected Offices concerned<br><input type="checkbox"/> other: |                    |  |

|   |  |
|---|--|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland<br><br>Facsimile No.: (41-22) 740.14.35 | Authorized officer<br><br>Maria Victoria CORTIELLO<br><br>Telephone No.: (41-22) 338.83.38 |
|---|--|


 PATENT COOPERATION TREATY

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 NOTIFICATION OF ELECTION  
 (PCT Rule 61.2)

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 United States Patent and Trademark  
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 Box PCT  
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 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

|   |   |
|---|---|
| Date of mailing (day/month/year)<br>21 August 2000 (21.08.00)             | Applicant's or agent's file reference<br>P-2040-PC            |
| International application No.<br>PCT/IL99/00613                           | Priority date (day/month/year)<br>16 November 1998 (16.11.98) |
| International filing date (day/month/year)<br>15 November 1999 (15.11.99) |   |
| Applicant<br>SARUSSI, Israel  |   |

1. The designated Office is hereby notified of its election made:

 in the demand filed with the International Preliminary Examining Authority on:

13 June 2000 (13.06.00)

 in a notice effecting later election filed with the International Bureau on:

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2. The election  was
 was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

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## PCTENT COOPERATION TREATY

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NOTIFICATION CONCERNING  
AMENDMENTS OF THE CLAIMS(PCT Rule 62 and  
Administrative Instructions, Section 417)

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| International application No.<br>PCT/IL99/00613               | International filing date (day/month/year)<br>15 November 1999 (15.11.99)  |
| Applicant<br><br>S.P.O. MEDICAL EQUIPMENT LTD. et al          |  |

The International Bureau hereby informs the International Preliminary Examining Authority that no amendments under Article 19 have been received by the International Bureau (Administrative Instructions, Section 417).

|  |  |
|--|--|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland<br><br>Facsimile No. (41-22) 740.14.35 | Authorized officer<br><br>Nestor Santesso<br><br>Telephone No. (41-22) 338.83.38 |
|--|--|